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(COERCIVE DUAL CLASS EXCHANGE OFFERS)

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COERCIVE DUAL CLASS EXCHANGE OFFERS*

by

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1. Introduction

Dual class exchange offers give shareholders the opportunity to exchange shares of common stock with superior voting rights for shares with inferior voting rights. To induce shareholders to participate in the exchange offer, the shares with inferior voting rights dominate the stock with superior voting rights in some other dimension, such as marketability or dividends. Since the managers and inside stockholders do not participate in the exchange, it results in the concentration of voting power by the insiders.

The concentration of voting power effectively blocks all hostile takeover attempts. To complete a hostile takeover attempt, the bidder either has to replace the target's board of directors or has to merge with the target. Both of these avenues are foreclosed by dual class plans; a hostile bidding firm that purchased all the outside shares cannot gain control over the target. Therefore, dual class plans may be the most effective universal anti-takeover device ever invented: they give the insiders that do not own a majority of the stock complete veto power over hostile bids.

*This study is adapted from a report that was prepared for Institutional Shareholder Services, Inc. and was submitted to the Securities and Exchange Commission in the hearings on the One Share, One Vote issue. I would like to thank: D. Austin-Smith, R. Gilson, J. Gordon, N. Minow, R. Monks, J. Parsons, J. Pound, and J. Rotemberg for comments on previous drafts.

Opponents of dual class exchange offers argue that the plans reduce stockholder wealth by eliminating the possibility of receiving a takeover premium. Proponents argue that outside stockholders have two important safeguards to protect them. First, shareholders must approve the recapitalization plan. Second, the decision to exchange their ordinary shares for limited voting shares is voluntary.

Other studies suggest that the first safeguard - the stockholder vote on the proposal - may not protect them. Austen-Smith and O'Brien (1986) focus on the agenda setting powers of managers. In their model, managers can force shareholders to choose among different value-reducing alternatives. Shareholders approve antitakeover provisions because such approval is the least costly alternative presented by managers. Gordon (1986) discusses these collective action problems in context of dual class recapitalizations. Also, Pound (1986) presents empirical evidence that institutional shareholders are more likely to vote with management than other shareholders in proxy contests.

This paper focuses on the second safeguard. It indicates that voluntary exchange does not, in fact, protect shareholders. Outside stockholders can be harmed. The terms of a dual class exchange offer can be structured to compel individual outside shareholders to exchange their shares for limited voting shares even though the same outside shareholders, in the same circumstances, but acting collectively, would choose not to exchange.

I develop a model to trace the impact of a dual class exchange offer on share prices. In the analysis, shareholders are given the opportunity to

trade their shares for limited voting stock with higher dividends. This choice presents outside shareholders with a classic prisoner's dilemma. It exploits the inability of individual shareholders to act together - each shareholder's rational choice leads to an outcome that is worse than if all shareholders retain their original shares. This occurs because individual outside shareholders generally ignore the impact of their exchange decision on the probability of receiving a takeover bid.

The exchange offers I examine entice outside shareholders with higher dividends for limited voting class shares. Examples of this type of plan include Wang Laboratories, Hershey, among others. If all stockholders received the higher dividends, no change in value would result. The dividends would simply be financed by reducing investments that just break even. But the plan provides the opportunity for wealth transfers between shareholders: shareholders that get the higher dividends receive a subsidy from shareholders that retain their original shares. This provides an inducement to exchange.

The perceived costs to the individual outside shareholders from exchanging depends on the rules for dividing the gains from a takeover offer across the classes of common stock. These rules are, of course, uncertain. I examine two different rules: (i) shareholders of both classes receive the same price in a takeover; and (ii) shareholders of stock with superior voting rights receive all of the benefits of a takeover.

The model indicates that as more of the potential takeover benefits are assigned to the limited voting class shares, the more effective is the coercion in the recapitalization plan. For example, suppose the rule

required that in the event of a takeover, the limited voting stock would receive twice the per share takeover premium than ordinary common stock received. To a small outside stockholder, such a rule would mean that there was a double benefit to taking the limited voting shares: higher dividends and higher takeover benefits. But both of these benefits are illusions. The higher dividends come from reduced investment. And the higher takeover benefits never occur, because insiders use the veto power to reject all hostile bids.

Section 2 presents a simple model of the firm that is used to trace the impact of the dual class exchange offer. Section 3 uses this model to explore the payoffs that outside shareholders confront when they decide which class of stock to retain. Section 4 proposes a non-coercive method to obtain a dual class equity capitalization. Finally, section 5 contains a summary and conclusion.

2. The Model

2.1 The Firm Prior To The Recapitalization

Suppose a firm earns $\$X$ in the first period. These earnings can be paid as dividends to stockholders or re-invested. The investments earn the cost of capital, r , so that each investment has a zero net present value. Define D as the proportion of earnings that are paid out as dividends in each period. The remaining earnings, $X(1-D)$, are re-invested in the firm. These re-investments earn the cost of capital, so that earnings grow over time when D is less than one. The earnings in time 2, X_2 , equals the earnings in time 1, X , plus the earnings on the funds re-invested in period

1, $X(1-D)r$:

$$X_2 = X + X(1-D)r = X(1 + (1-D)r).$$

In general,

$$X_t = X_{t-1} (1 + (1-D)r) = X (1 + (1-D)r)^{t-1}. \quad (1)$$

The value of the dividends accruing to stockholders is:

$$\begin{array}{l} \text{Present Value} \\ \text{of Dividends} \end{array} = \sum_{t=1}^{\infty} \frac{DX_t}{(1+r)^t} \quad (2)$$

Substituting (1) into (2) yields:

$$\begin{aligned} \sum_{t=1}^{\infty} \frac{DX_t}{(1+r)^t} &= \sum_{t=1}^{\infty} \frac{DX(1 + r(1-D))^{t-1}}{(1+r)^t} \\ &= X/r \end{aligned} \quad (3)$$

In addition to the value of the dividends, the equity value also includes the expected value of a takeover. This expected value reflects the probability that a takeover will occur and the expected takeover price if such an offer occurs. The equity value of the firm, V , is the sum of the value of the dividends plus the value of the takeover potential. Defining π as the probability of a takeover and T as the expected per share takeover price, the value of the firm is:

$$\begin{aligned} V &= \frac{X}{r} + \pi \left[NT - \frac{X}{r} \right] \\ &= \frac{X}{r} (1-\pi) + \pi NT, \end{aligned} \quad (4)$$

where N is the number of the shares outstanding. The stock price is found by dividing the equity value by the number of outstanding shares:

$$P = \frac{X}{rN} (1-\pi) + \pi T \quad (5)$$

2.2 The Dual Class Recapitalization

A hostile bidder either has to replace a target firm's board of directors or has to merge with the target to obtain control. Dual class recapitalizations serve as an antitakeover device by giving the incumbent management team veto power over mergers and changes in the composition of the board of directors. By creating stock with superior voting rights, dual class plans allow the incumbent management to obtain the veto power without owning a majority of the common stock.

Veto power occurs when a group of stockholders can block a merger or a change in the board. The level of ownership required to obtain veto power depends on the ratio of votes for classes A and B and the voting rules of the corporation. Throughout this analysis I assume that class A shares have 10 votes per share and class B shares have one vote per share.

The voting rules of corporations with dual class equity seem to fall into two categories: (i) plans in which both classes vote together to elect directors, and (ii) plans in which the classes vote separately to elect different directors, with the superior class of stock electing a majority of directors. If the two classes vote together, and if a majority is required to approve a merger or replace directors, the insiders will have veto power if they obtain a majority of the votes. If the two classes vote separately to elect directors, with class A electing most of the directors, veto power is obtained with fewer shares since only a majority of the class A shares is

required to veto control changes. Anti-takeover corporate charter provisions, such as a super-majority clause, can further reduce the number of shares required for veto power.

Assume that the firm recapitalizes by redefining the existing common stock as class A shares with 10 votes per share. The stockholders are given the opportunity to exchange their class A shares for class B shares. The class B shares have 1 vote per share, but the per share class B dividends are $\Delta\%$ higher than the class A dividends:

$$d_b = d_a(1+\Delta) \quad (6)$$

where d_a and d_b are the proportion of earnings paid out as dividends to a single share of class A and B stock, respectively.

The proportion of earnings paid as dividends to each class of stock depends on the total number of shares outstanding, N , and the fraction of shares that are exchanged. The proportion of earnings paid as dividends to class A shares, D_a , equals the number of class A shares, N_a , multiplied by the per share dividend payout ratio, d_a :

$$D_a = N_a d_a \quad (7)$$

Similarly, the proportion of dividends paid to the class B shares, D_b , is:

$$D_b = N_b d_b, \quad (8)$$

where N_b is the number of class B shares. The proportion of earnings paid out as dividends to both classes of stock, D , is:

$$\begin{aligned} D &= D_a + D_b \\ &= N_a d_a + N_b (1 + \Delta) d_a \\ &= d_a (N + \Delta N_b) \end{aligned} \quad (9)$$

The present value of the class A dividends after the recapitalization is:

$$\begin{array}{l} \text{Present Value of} \\ \text{of Class A} \\ \text{Dividends} \end{array} = \frac{D_a X}{rD} \quad (10)$$

Substituting (7) and (9) into (10) and simplifying provides:

$$\begin{array}{l} \text{Present Value} \\ \text{of Class A} \\ \text{Dividends} \end{array} = \frac{N_a X}{r(N + \Delta N_b)} \quad (11)$$

Similarly, the present value of the Class B dividends is:

$$\begin{array}{l} \text{Present Value} \\ \text{of Class B} \\ \text{Dividends} \end{array} = \frac{N_b (1 + \Delta) X}{r(N + \Delta N_b)} \quad (12)$$

3. Decision Analysis for an Individual Shareholder

An individual shareholder must analyze the valuation consequences of exchanging shares conditional on the actions of other stockholders because the stock price after the recapitalization depends on the fraction of shareholders that exchange their shares for class B stock. Since the purpose of the recapitalization is to increase the control of the inside stockholders, I assume that inside shareholders retain their class A shares. If insiders obtain veto power, I assume that they will use it to reject all takeover proposals. This assumption simplifies the analysis, but it is not required. Instead, I could assume that the expected takeover benefits are lower when insiders have veto power. One explanation for this is that the probability of a takeover is lower when insiders have veto power because they will reject some offers that would be accepted by outside shareholders.

The decision of an individual outside shareholder is examined under three different assumptions about the behavior of other outside

shareholders:

(i) inside shareholders do not obtain veto power regardless of the remaining outside shareholder's decision because few other outside shareholders exchange.

(ii) the remaining outside shareholder is pivotal: exchanging gives the insiders veto power; not exchanging denies the insiders veto power.

(iii) enough other outside shareholders exchange for class B so that insiders obtain veto power regardless of the remaining outside shareholder's decision.

In each of these cases the remaining outside stockholder decides to exchange or not by simply comparing the prices under each alternative. If the price of the class A stock, P_a , exceeds the price of class B, P_b , the remaining outside stockholder will not exchange. Conversely, if P_b exceeds P_a , the shareholder will exchange.

The value of class A and B shares includes the present value of their dividends, plus the expected premium in the event of a takeover. The expected takeover premium is calculated assuming that the price an acquiring firm is willing to pay for the target is not affected by the recapitalization. If a takeover occurs, the bidder pays NT to acquire the firm.

DeAngelo and DeAngelo (1985) document that takeover premiums can be split a number of different ways across different classes of shareholders. I focus on two possible splits. The first possible split is that both classes of shares receive the same price in any takeover, $\$T$ per share. In the second split, class B shareholders receive the present value of their future dividends and the class A holders receive the difference between the takeover price and the payment to class B. In other words, under the second

split, class B shareholders receive no takeover premium and class A shareholders get all of the takeover benefits. Since division of the potential takeover benefit affects the values of class A and B shares, it also affects the exchange decision. Therefore, the exchange decision is first analyzed assuming equal takeover prices for both classes and then analyzed assuming class A captures all of the takeover premium.

3.1. Decision analysis assuming equal takeover prices

(i) **Insiders do not obtain veto power regardless of remaining shareholders**

decision: The minimum number of class B shares required for insiders to obtain veto power, N_c , depends on the voting rules of the firm. When the number of class B shares is less than N_c , the exchange offer will not result in veto power for the insiders regardless of the remaining shareholder's decisions. The probability of a takeover remains positive with a value of π . The value of a class B share is:

$$P_b = \frac{X(1+\Delta)}{r(N+\Delta N_b)} + \pi \left[T - \frac{X(1+\Delta)}{r(N+\Delta N_b)} \right] \quad (13)$$

The first term on the right-hand side of (13) is the present value of the dividend flow to a class B stockholder. The second right-hand side term is the expected takeover premium, that is, the probability of receiving an offer, π , multiplied by the difference between the takeover price, T , and the present value of the dividends. Re-arranging (13) provides:

$$P_b = \frac{X(1+\Delta)(1-\pi)}{r(N+\Delta N_b)} + \pi T \quad (14)$$

Similarly, the price of a class A share is:

$$P_a = \frac{X(1-\pi)}{r(N+\Delta N_b)} + \pi T \quad (15)$$

These prices are presented in the first row of Table 1.

The shareholder makes the exchange decision by comparing the payoffs, or equivalently, the stock prices. From the perspective of a single stockholder, the exchange decision does not change the probability of a takeover or the takeover price. And both class A and B have identical expected takeover price components. The exchange decision, therefore, hinges on the higher dividend for class B shares. The decision of the remaining outside stockholder is simple: The class B stock receives a higher dividend and thus has a higher stock price. Therefore, it is rational for the remaining outside stockholder to exchange the class A stock for class B stock.

(ii) Remaining Shareholder is Pivotal: In this scenario the remaining shareholder's exchange decision determines whether insiders obtain veto power. Exchanging reduces the number of class A shares held by outsiders, which gives the insiders veto power. The probability of a takeover becomes zero because the insiders obtain blocking power.

Exchanging gives the shareholder the higher class B dividends. However, the exchange also eliminates the takeover potential. The payoff from exchanging is the present value of the class B dividends:

$$P_b = \frac{X(1+\Delta)}{r(N+\Delta N_b)} \quad (16)$$

In contrast, if the remaining shareholder does not exchange, the payoff is the price of the class A stock, which is given by (15).

As the second row of table 1 indicates, the decision of the remaining outside shareholder involves comparing the expected takeover premium to the present value of the dividend differential between class A and B shares.

TABLE 1

Stock Prices for an individual outside shareholder that either exchanges or does not exchange a share of class A stock for a share of class B stock. In the event of an acquisition, both classes would receive equal takeover prices ^{a/}—

INDIVIDUAL ACTION

<u>ACTION OF OTHER OUTSIDERS</u>	<u>EXCHANGE</u>	<u>DO NOT EXCHANGE</u>
1. $N_b < N_c - 1$	$\frac{X(1+\Delta)(1-\pi)}{r(N+\Delta N_b)} + \pi T$	$\frac{X(1-\pi)}{r(N+\Delta N_b)} + \pi T$
2. $N_b = N_c - 1$	$\frac{X(1+\Delta)}{r(N+\Delta N_b)}$	$\frac{X(1-\pi)}{r(N+\Delta N_b)} + \pi T$
3. $N_b > N_c$	$\frac{X(1+\Delta)}{r(N+\Delta N_b)}$	$\frac{X}{r(N+\Delta N_b)}$

^{a/} Class B dividends are $\Delta\%$ higher than class A dividends, X is the initial earnings of the firm, r is the interest rate, N is the number of shares outstanding, N_b is the number of outside stockholders that exchange for class B shares, N_c is the minimum number of class B shares for insiders to obtain veto power, π is the probability of a takeover when insiders do not have veto power, and T is the per share takeover price.

Increasing the probability of a takeover, π , or the takeover price, T , increases the payoff to retaining the class A shares. Increasing the dividend differential, Δ , increases the payoff to exchanging for class B shares. Thus, the decision of the pivotal shareholder depends on the specifics of the dual class exchange offer.

(iii) Insiders Obtain Veto Power Regardless of Remaining Stockholder's

Decisions: In this scenario, enough other outside shareholders elect to exchange their class A shares for class B shares for insiders to obtain veto power regardless of the decision of the remaining shareholder. The probability of a takeover becomes zero. The value of both class A and B shares reflects the present value of their dividends. These payoffs are presented in the third row of Table 1. Since the dividends are higher for class B shares, the remaining outside stockholder will choose to exchange class A shares for class B.

Analysis: When class A and class B equity holders receive the same takeover price, outside shareholders always benefit by exchanging class A shares for class B shares if their shares are not pivotal. Shares that are not pivotal have no impact, individually, on the availability of takeover benefits. If few shareholders exchange, as in the first scenario, then an individual receives the expected takeover benefits regardless of the exchange decision. Similarly, if many shareholders exchange, as in the third scenario, the individual will not receive the expected takeover benefit regardless of the exchange decision. Since the class B shares have higher dividends and equal takeover benefits, class B shares have higher prices. Therefore, individual outside shareholders that are not pivotal will rationally exchange their

class A shares for class B shares.

The decision is more complex for a pivotal shareholder. The exchange decision determines the availability of the takeover benefit. The pivotal shareholder faces a tradeoff between a class A share with its expected takeover benefit and a class B share with higher dividends. The rational decision depends on the relative magnitudes. In some cases, exchanging will be rational; in others, not exchanging will be rational.

When the dividend differential and takeover benefits are such that the pivotal shareholder exchanges for class B shares, exchanging is a dominant strategy. That is, every outside stockholder will choose to exchange. In this case, the value of the class B shares after the exchange will be:

$$P_b = \frac{X(1+\Delta)}{r(N + \Delta N_b)} .$$

Comparing the post-exchange stock price of class B shares to the initial stock price in (5) shows that the potential takeover benefits are lost in the exchange offer. The higher dividends to class B shares offset some of this loss. But the present value of the higher class B dividends is less than the dividend differential. The fraction of class B ownership determines how much of the higher dividends paid to class B shareholders will be paid by (i) lower re-investments and (ii) wealth transfer from the class A shareholders. As the fraction of inside ownership declines, the portion of the dividend differential financed by reduced investment increases and transfers from class A shareholders decrease.

When the dividend differential and takeover benefits are such that the exchanging is not a dominant strategy, the public choice problem inherent in

the exchange offer still distorts the exchange decision of outside stockholders. The optimal exchange strategy for an individual outside shareholder will depend on the probability that the shareholder is pivotal because exchanging is still the best decision for shares that are not pivotal. Since no shareholder can be certain of being pivotal, the decision will not be based on a simple comparison of the payoffs for the pivotal shareholder. An undistorted decision - which is the decision that outside shareholders would make if they could act collectively - would be based on such a simple comparison of the payoffs to the pivotal shareholder. Therefore, the dual class exchange offer still distorts even when exchanging is not a dominant strategy for all outside shareholders.

3.2. A Numerical Example Assuming Equal Takeover Prices.

Figure 1 plots the prices of class A and B shares as the fraction of insider class A ownership increases. The example assumes an all equity firm with 1000 shares of common stock outstanding; 200 shares owned by insiders and 800 shares owned by outsiders. The annual earnings of the firm are \$10,000 and the interest rate is 10 percent. There is an assumed 10 percent chance of receiving a takeover bid at \$150 per share.

A dual class recapitalization plan is introduced that declares existing common stock to be class A shares with 10 votes per share. Shareholders are given the opportunity to exchange their class A shares for an equal amount of class B shares which have one vote per share. In the event of a takeover, both classes receive \$150 per share in accordance with the equal takeover price assumption. The class B shares receive a 10 percent higher dividend than class A shares.

The prices on figure 1 are the payoffs from the exchange decision: P_a is the payoff if the shareholder elects to retain class A shares; P_b is the payoff if the shareholder decides to exchange. As the discussion in section 2 shows, these payoffs depend on the actions of other shareholders. Therefore, the example is based on various behavioral assumptions about the exchange decisions of other outside shareholders. In all cases, the 200 inside shareholders are assumed to retain their class A shares.

The highest price of class B shares, P_b , of \$109.99 occurs when there is only one class B share. This corresponds to the assumption that the other 799 outside shareholders retain class A shares and that the remaining outside shareholder exchanges for a class B share. The percentage of inside class A ownership is 20.02 percent (200 class A shares owned by insiders divided by 999 total class A shares). The price is calculated using equation (14), which also appears in the first column of the first row of table 1:

$$P_b = \frac{X(1+\Delta)(1-\pi)}{r(N+\Delta N_b)} + \pi T$$

Substituting a value of \$10,000 for annual earnings, X ; a dividend differential, Δ , of 10 percent; an interest rate, r , of 10 percent; a probability of takeover, π , of 10 percent; and a takeover price, T , of \$150 provides:

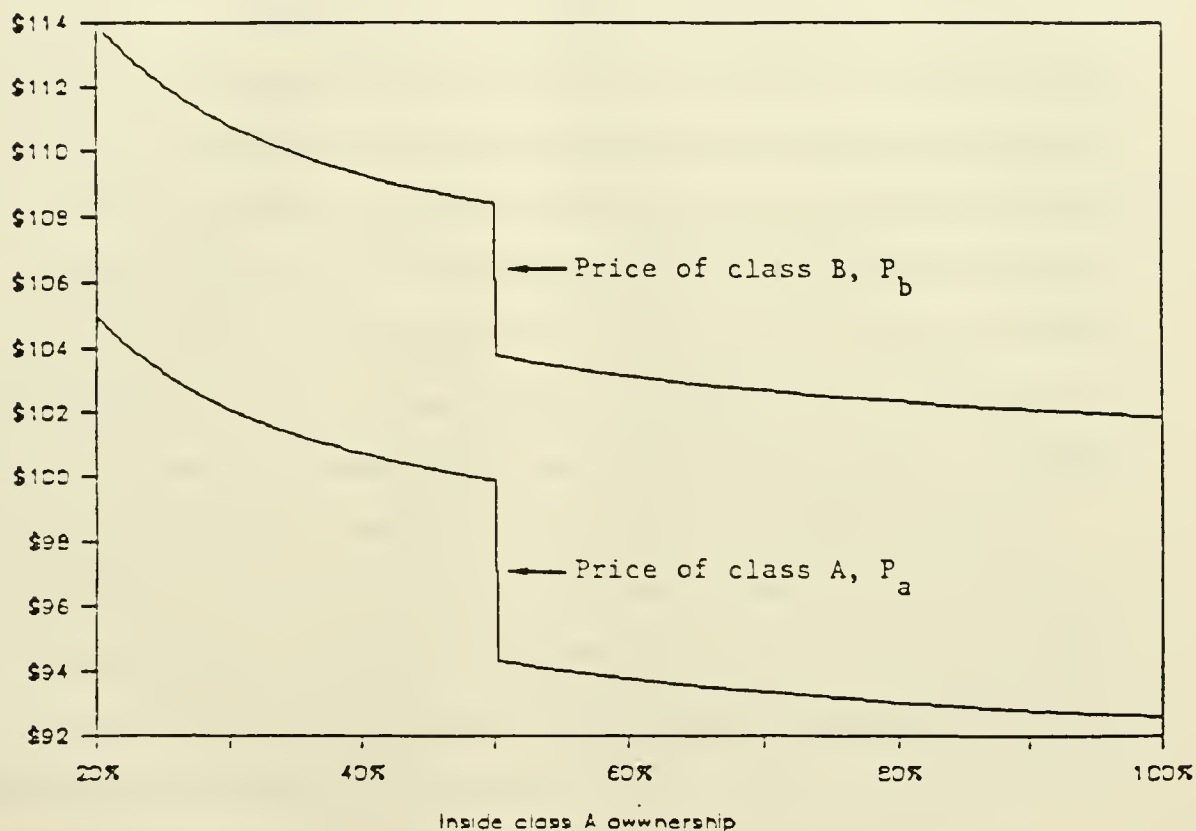
$$P_b = \frac{10,000(1+.10)(1-.10)}{.10(1000 + .1*1)} + .1 * 150 = \$113.99$$

which is the left-most point on the curve labeled P_b in figure 1.

Retaining the assumption that 799 outside stockholders choose to keep class A shares, the payoff of keeping a class A share for the remaining

FIGURE 1

Payoffs for an individual outside shareholder from choosing a share of class A or class B stock assuming equal per share takeover prices.^{1/}



^{1/} The example assumes an all equity firm with 1000 shares of common stock outstanding; 200 shares owned by insiders and 800 shares owned by outsiders. Insiders always retain class A shares. The annual earnings of the firm are \$10,000 and the interest rate is 10 percent. There is an assumed 10 percent chance of receiving a takeover bid at \$150 per share. The class B shares receive a 10 percent higher dividend than class A shares.

outside shareholder is given by equating (15), which is also presented in the second column of the first row of table 1:

$$P_a = \frac{X(1-\pi)}{r(N+\Delta N_b)} + \pi T \quad .$$

Substituting the numerical values above and a zero for N_b provides:

$$P_a = \frac{10,000(1-.1)}{.1(1000 + .1*0)} + .1 * 150 = \$105$$

which is plotted as the left-most point on the line labeled P_A in table 1. The price of \$105 for a share of class A stock is the same as the pre-recapitalization stock price. This occurs because, under these behavioral assumptions, the decision by the shareholder to retain the class A stock negates the recapitalization plan. All shareholders retain class A shares. The firm under these assumptions is identical to its pre-recapitalization condition: there is only one class of common stock, class A.

Since the payoff of electing a class B share is \$113.99 and the payoff of retaining class A shares is \$105, a rational outside shareholder will exchange for class B stock when the decision is based on the assumption that the other 799 outside shareholders will retain their class A shares. The rationality of choosing class B stock continues as more outside shareholders are assumed to exchange for class B shares, and the fraction of inside class A ownership rises until the remaining outside shareholder is assumed to be pivotal.

Assuming that insiders require a majority of class A votes to obtain veto power, an outside shareholder is pivotal under the assumption that 200 outside shareholders retain class A shares and 599 exchange for class B. If

the remaining outside shareholder elects to retain the class A share, insiders do not obtain veto power. The payoff to retaining class A stock is given by equation (1), which is presented in the second column of the second row of table 1. Using the values in this example, the price of class A is \$99.91.

If the pivotal shareholder exchanges for class B, the insiders obtain veto power. Even though class B shareholders would receive the same takeover price as class A shareholders, no such takeover will occur because insiders have blocking power. Thus, the payoff from class B stock does not include expected takeover benefits. The price of class B is \$103.76, which is determined using the formula in the first column of the second row of table 1. The loss of \$4.63 from the elimination of the expected takeover benefits accounts for the sharp drop in the price of the class B stock depicted in figure 1. Nevertheless, the payoff to exchanging for class B shares of \$103.76 exceeds the payoff of \$99.91 from retaining class A shares. Therefore, it is rational for an outside shareholder to forego the expected takeover benefits and exchange for class B. This decision results in a drop in the price of class A stock since it can no longer receive the expected takeover benefits.

Assuming that insiders obtain veto power, and that more than 600 outside shareholders exchange for class B, the decision of an outside shareholder involves a comparison of the two payoff functions presented in the third row of table 1. When insiders own more than 51 percent of the class A shares, figure 1 illustrates that the payoff from exchanging for class B stock exceeds the payoff from retaining class A stock. Therefore,

rational shareholders will elect class B shares.

In this numerical example, rational outside shareholders always exchange their class A shares for class B shares regardless of the behavioral assumptions about the actions of other shareholders. These rational choices will result in the firm having 800 class B shares at a price of \$101.85 per share and 200 class A shares at a price of \$92.60. Both of these prices are lower than the initial stock price of \$105 before the recapitalization. Both classes lose the \$5 expected takeover benefit component of the initial price. The class B stock has this loss partially offset by a dividend-induced wealth transfer from class A shares. This wealth transfer results in a larger per share loss for class A shares because there are more class B shares. Nevertheless, the example shows that outside shareholders, acting individually, will rationally participate in an exchange offer that results in a three percent decline in the value of their shares. The plan is, therefore, coercive because it induces outside stockholders to accept a dual class recapitalization that they would reject if they were able to decide collectively.

3.3. Decision analysis assuming class A shares get all of the takeover benefits.

In this section, the exchange decision of an outside shareholder is explored assuming that the class A shareholders receive all of the takeover benefits. If a takeover occurs, class B shares are redeemed at the present value of the dividends that accrue to their shares. Class A shareholders would receive the takeover price, NT, minus the value of the class B shares.

Table 2 presents the payoffs from exchanging and not exchanging based on the three different assumptions about the behavior of other outside

TABLE 2

Stock prices for an individual outside shareholder that either exchanges or does not exchange a share of class A stock for a share of class B stock. In an acquisition class B would receive the present value of future dividends and class A would receive the difference between the takeover price and the payment to class B shares.^{a/}

INDIVIDUAL ACTION

	ACTION OF OTHER OUTSIDERS	EXCHANGE	DO NOT EXCHANGE
1.	$N_b < N_c - 1$	$\frac{X(1 + \Delta)}{r(N + \Delta N_b)}$	$\frac{X(1-\pi)}{r(N + \Delta N_b)} + \frac{\pi}{N-N_b} \left[NT - N_b \frac{X(1+\Delta)}{r(N + \Delta N_b)} \right]$
2.	$N_b = N_c - 1$	$\frac{X(1 + \Delta)}{r(N + \Delta N_b)}$	$\frac{X(1-\pi)}{r(N + \Delta N_b)} + \frac{\pi}{N-N_b} \left[NT - N_b \frac{X(1+\Delta)}{r(N + \Delta N_b)} \right]$
3.	$N_b > N_c$	$\frac{X(1 + \Delta)}{r(N + \Delta N_b)}$	$\frac{X}{r(N + \Delta N_b)}$

^{a/} Class B dividends are $\Delta\%$ higher than class A dividends, X is the initial earnings of the firm, r is the interest rate, N is the number of shares outstanding, N_b is the number of outside stockholders that exchange for class B shares, N_c is the minimum number of class B shares for insiders to obtain veto power, π is the probability of a takeover when insiders do not have veto power, and T is the per share takeover price.

shareholders examined previously: (i) insiders do not obtain veto power regardless of the remaining shareholder's decision; (ii) the remaining shareholder is pivotal; and (iii) the insiders obtain veto power regardless of the shareholder's decision. In general, changing the assumption about the division of takeover benefits increases the benefits to not exchanging.

(i) Insiders do not obtain veto power regardless of the remaining shareholder's decision: In this scenario, few outside stockholders elect class B shares so that the insiders do not obtain veto power. The payoffs associated with exchanging or not exchanging are presented in the first row of table 2. The payoff from not exchanging is just the present value of the dividends that accrue to the shares:

$$P_b = \frac{X(1+\Delta)}{r(N+\Delta N_b)} .$$

No takeover benefits are included in the value of the class B shares because class A shareholders are assumed to capture all of the benefits in the event of a takeover.

The price of the class A shares includes the present value of the dividends that accrue to the shares plus the expected value of the per share takeover premium. Assuming a takeover occurs, the per share takeover price is:

$$\frac{1}{N - N_b} \left[NT - N_b \frac{X(1+\Delta)}{r(N+\Delta N_b)} \right]$$

where $N - N_b$ is the number of class A shareholders, and the bracketed term is the takeover price for the firm minus the cost of redeeming all of the class B shares. Assuming that the probability of a takeover bid is π , the stock

price of class A shares is:

$$\begin{aligned}
 P_a &= \frac{X}{r(N+\Delta N_b)} + \frac{\pi}{N - N_b} \left[NT - N_b \frac{X(1+\Delta)}{r(N+\Delta N_b)} - \frac{X}{r(N+\Delta N_b)} \right] (17) \\
 &= \frac{X(1-\pi)}{r(N+\Delta N_b)} + \frac{\pi}{N-N_b} \left[NT - N_b \frac{X(1+\Delta)}{r(N+\Delta N_b)} \right] .
 \end{aligned}$$

Comparing the payoffs to retaining class A shares given by (17) and the payoffs from exchanging for class B shares in (16) indicates that the decision hinges on the relative magnitudes of the present value of the dividend differential and the expected takeover benefit. Higher relative class B dividends and lower expected takeover benefits encourage conversion of class A shares into class B shares. However, the more outside shareholders that are assumed to exchange, the larger is the per share expected takeover component class A shares. This reduces the incentive to exchange because the cost of foregoing the expected takeover benefits is greater. No such disincentive to exchange occurs in the comparable analysis under the equal takeover price assumption.

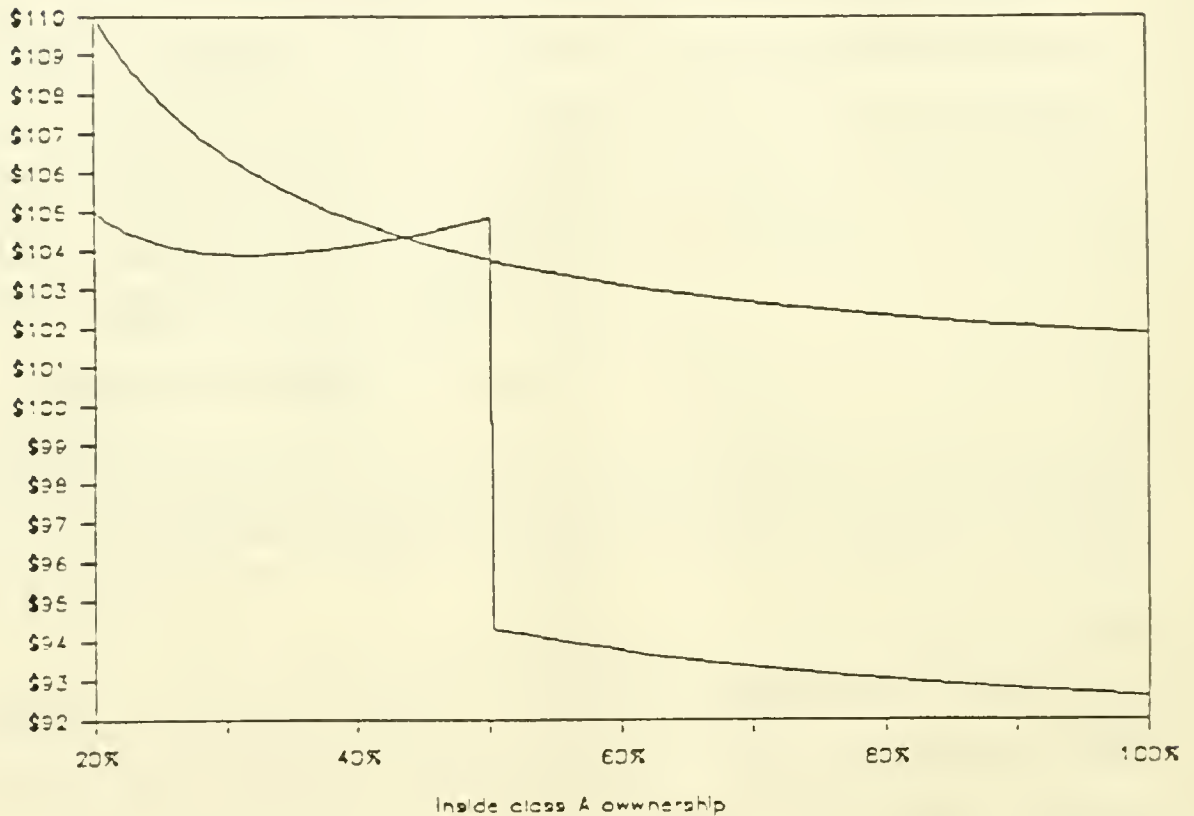
(ii) Remaining Shareholder is Pivotal: The payoffs under the assumption that the remaining outside stockholder's decision determines whether the insiders obtain veto power are presented in the second row of table 2.

These formulas are identical to those in the first row of table 2.

Therefore, the decision involves a tradeoff between the present value of the dividend differential and the expected takeover benefit. Note that when the outsider is assumed to be pivotal, the per share component of the takeover benefits is maximized. This discourages exchanging the pivotal class A share for a share of class B stock.

FIGURE 2

Payoffs for an individual outside shareholder from choosing a share of class A or class B stock assuming class A shares receive all of the takeover benefits.^{1/}



^{1/} The example assumes an all equity firm with 1000 shares of common stock outstanding; 200 shares owned by insiders and 800 shares owned by outsiders. Insiders always retain class A shares. The annual earnings of the firm are \$10,000 and the interest rate is 10 percent. There is an assumed 10 percent chance of receiving a takeover bid at \$150 per share. The class B shares receive a 10 percent higher dividend than class A shares.

(iii) Insiders Obtain Veto Power Regardless of Remaining Stockholder's

Decision: The remaining outside stockholder's decision is simple when veto power by insiders is assumed. Neither class of stock has access to the expected takeover benefits. Since class B stock has a higher dividend, it is rational for the outside shareholder to exchange for class B shares.

3.4. A Numerical Example Assuming Class A Shareholders Get All of the Takeover Benefits.

Figure 2 plots the prices of class A and B shares as the fraction of inside class A ownership increases using the same example as in figure 1. However, figure 2 assumes that class A stockholders receive all of the premium in the event of a takeover. This portion of the value of class A stock rises as the number of class A shareholders is reduced, accounting for the upward sloping portion of payoff function in figure 2. This implicit per share takeover price rises from \$150 to \$199.47. The payoff to class B shares declines smoothly in figure 2, reflecting the reduction in the amount of the dividend benefit as the number of class A shares is reduced.

Figure 2 shows that outside shareholders will choose to retain class A shares when they assume that between 540 and 600 other outside shareholders exchange for class B shares. This region includes outside shareholders that assume they are pivotal. The payoff to class A shares exceeds the payoff from exchanging for class B because the per share expected takeover benefit exceeds the value of the higher class B dividends. Under all other assumptions about the exchange behavior of other outside shareholders, the rational choice for a remaining outside shareholder is to exchange for class B shares.

4. Non-coercive methods of obtaining dual class equity capitalization

This section examines alternative methods for converting a single class equity into multiple classes of equity. Dual class exchange offers can be coercive because the insiders set the terms and conditions for the exchange between class A and class B shares, and provide an inducement to encourage outsiders to exchange. This presents outside shareholders with a distorted choice that can reduce the value of their claims. Nevertheless, as Fischel (1986) argues, dual class equity may provide firms with valuable flexibility. To achieve a dual class capitalization without coercion, it may be possible to use the capital market to set the terms of the exchange between class A and B shares. This circumvents the role of managers and can eliminate the coercion.

Capital markets efficiently price securities based on the cash flows that are expected to accrue to the security and the riskiness of the cash flows. An initial public offering of limited voting class B shares, for example, would be priced based on the characteristics of the security including its voting rights, returns, and risk. The purchasers of the initial public offering have no pre-existing association with the issuing firm and therefore cannot be coerced into buying the shares. These new shareholders "price protect" themselves, paying no more than their assessment of the value of the shares. Such an initial public offering of limited voting class B shares would establish a dual class equity capitalization without a coercive exchange offer.

The initial public offering itself would not concentrate voting power to the insiders because it does not extinguish the voting rights of outside

common stockholders. This can be accomplished by using the proceeds of the offering to repurchase the outsiders' common stock. The number of limited voting right shares issued, and the number of ordinary shares repurchased, determines the equity capitalization of the firm. The repurchase can be accomplished by using a tender offer or by open market purchases. Under both methods, the insiders would be forced to disclose information about the number of shares that would be repurchased. Outside shareholders, using this information, can decide whether to sell their shares in the repurchase.

Suppose the insiders decide to repurchase all of the outside class A common stock through a tender offer at its pre-existing stock price. Retaining the description of the firm presented in section 2, the cost of this repurchase, R , would be:

$$R = (N - N_1) \left(\frac{X}{rN} (1 - \pi) + \pi T \right) \quad (18)$$

where $N - N_1$ is the number of outside common shares and the second term in parentheses is the pre-existing per share price of the common stock.

The proceeds of the initial public offering of limited voting class B shares depend on the number of shares issued, the dividend differential, and the rule governing the split between the class A and B shares of any eventual takeover premium. I assume that the firm issues just enough class B shares to finance the repurchase. Also, I assume that the class B shares have no claim to takeover premiums.

The number of limited voting shares in the initial public offering, N_b , is:

$$N_b = \frac{rN_a R}{(x - rR)(1 + \Delta)} \quad , \quad (19)$$

where N_a is the number of class A shares owned by insiders. The price of the class B shares will be:

$$P_b = \frac{X(1+\Delta)}{(r(N_a + N_b(1 + \Delta)))} \quad (20)$$

Note that the number and price of class B shares are determined simultaneously.

Using numerical value from the example described in section 3, the cost of repurchasing the 800 shares owned by outsiders is:

$$R = (1000 - 200) \left(\frac{10,000}{.1 \cdot 1000} (1 - .1) + .1 \cdot 150 \right) = \$84,000$$

The number of class B shares in the initial public offering is determined using (19):

$$N_b = \frac{.1 \cdot 200 \cdot 84,000}{(10000 - .1 \cdot 84000)(1 + .1)} = 954.55$$

The price of class B shares from (20) is:

$$P_b = \frac{10,000 (1 + .1)}{.1 (200 + 954.55 (1 + .1))} = \$88.$$

The repurchase and issue process increases the number of shares that have claims to the firm's dividends, and thereby dilutes the price of the insiders' class A shares. The per share value of the insiders' shares after the introduction of dual class equity capitalization is:

$$P_a = \frac{10,000}{.1 (200 + 954.55 (1 + .1))} = \$80.$$

This is about a 31 percent reduction from its initial value of \$105. The

loss in total equity of \$5000 (\$5 per share times 1000 shares) is caused by the elimination of the expected takeover benefits. The outside class A shareholders sell their shares to the firm at its fair market value. And the class B shareholders get exactly what they pay for: they pay \$88 for dividends worth \$88. The insiders bear the entire loss of \$5000 $((105 - 80) \times 200)$. Therefore, under this plan insiders purchase the control rights to the firm at fair market value using their own capital.

The issue/repurchase solution forces insiders to purchase the control rights to the firm at fair market value only when the insiders do not use their decision-making power to exploit the outside shareholders. In the analysis, this exploitation was prohibited by assuming the repurchase of class A shares occurs at its pre-existing price. However, the insiders could announce their intent to recapitalize, issue the class B shares, and offer to repurchase the class A shares at slightly above the present value of the class A dividends. In the context of the numerical example, outside shareholders would be willing to sell their shares at any price above \$100 per share if insiders were certain to obtain veto power. If this exploitation occurs, insiders obtain control at the outside stockholders expense.

The potential for exploiting outside stockholders is not unique to dual class plans. It occurs whenever a group of shareholders can credibly obtain a majority of the shares outstanding. Perhaps the most transparent examples of this are going private transactions, freezeout tender offers, and

leveraged buyouts.¹ Empirical evidence indicates outside shareholders generally receive premiums in such transactions.² There are a variety of plausible explanations for this lack of exploitation including legal protection and the competitive nature of the corporate control market. Nevertheless, the specific device that keeps the insiders from using their decision - making power to exploit outside shareholders requires more detailed development.

5. Summary and Conclusions

Dual class exchange offers can induce outside shareholders to individually choose class B shares even though outside shareholders lose money from the plan. If collective action were possible, outside shareholders would choose to defeat the exchange offer and retain a single class of equity.

The exchange offers examined coerce outside shareholders with higher dividends for class B shares. If all stockholders received this higher dividend, no change in value would occur. The dividends would simply be financed by reducing zero net present value investments. But the plan provides the opportunity for wealth transfers to shareholders that elect class B shares with the higher dividends from those that retain class A shares. Outside shareholders are induced to choose class B shares,

¹ Gilson (1987) discusses the similarities between dual class capitalization on leveraged buyouts and other going private transactions.

² DeAngelo, DeAngelo and Rice (1984) report gains of about 22% at the announcement of going private transactions. Dodd and Ruback (1977) report gains of about 17% for freezeout tender offers.

therefore, to avoid the wealth loss associated with subsidizing the higher dividend payments to others and to receive a subsidy from class A holders. Other devices, such as trading restrictions on class A shares, could be used as a substitute for the dividend differential to induce outside shareholders to choose class B shares.

The outside shareholders' decision to choose class B shares is affected by the rules governing the split of takeover premiums between the two classes of stock. Plans that specify equal takeover prices for both classes provide more inducement to choose limited voting shares than plans in which all takeover benefits go to the class A shares. This occurs because individual shareholders generally ignore the impact of their exchange decision on the probability of receiving a takeover. Thus, under the equal takeover price assumption, outside shareholders (other than those that believe they are pivotal) do not include the loss of the expected takeover benefits as a cost of exchanging. Rational outside stockholders exchange; they gain from the higher dividend and there are no offsetting individual costs. This increases the chance that the recapitalization plan will be successful, giving insiders veto power over control changes and causing the associated loss in expected takeover benefits. In contrast, under the assumption that class B holders get no takeover benefit, the loss of these benefits are a cost to exchanging for class B, which partially offsets the dividend inducement to choose class B. Nevertheless, both types of plans can be coercive.

The losses for outside shareholders in this analysis evolve from the evaporation of the potential takeover premium when the insiders obtain veto

power. If the firm had sufficient inside ownership or other antitakeover provisions for the managers to block takeovers before the dual class recapitalization, then the managerial veto power in the recapitalized firm would not change the chance of receiving a takeover bid. This may explain some of the empirical findings on firms with dual class equity. Partch (1986), for example, examines 43 publicly traded firms that created a dual class equity structure during the period of 1962-84. She finds that this change is associated with a stock price increase of about 2 percent, but significance of this result is questionable because the median effect is about 0 percent. Partch also reports that the average level insider ownership is 48.6 percent prior to the recapitalization. Similarly, Gordon (1986) reports insignificant stock price changes for 19 NYSE firms that recapitalized during the period of 1984-86. He reports that the inside ownership of these firms was 30 percent. The managers of the firms in these samples may have been able to block takeovers before and after the recapitalization. If so, these empirical results may not be useful in forecasting the impact of a recapitalization on a typical New York Stock Exchange firm. Such typical firms have substantially less inside ownership and are subject to takeover bids. The loss of the ability to receive a takeover bid would result in a reduction in stock price.

Finally, I propose an alternative to recapitalizations that enables firms to establish a dual class equity structure without coercing outside stockholders. The key to the plan is the use of an efficient capital market to price both classes of stock separately. The limited voting shares are issued through an initial public offering and the proceeds are used to repurchase the outside stockholders' shares. This method still results in a loss of the expected takeover premium. But unlike coercive exchange offers,

this method forces inside stockholders to pay for eliminating the possibility of receiving a takeover bid.

REFERENCES

- Austen-Smith, David and Patricia C. O'Brien. 1986. "Takeover Defenses and Shareholder Voting". Sloan School of Management Working Paper #1823-86.
- DeAngelo, Harry and Linda DeAngelo. 1985. "Managerial Ownership of Voting Rights: A Study of Public Corporations with Dual Classes of Common Stock". Journal of Financial Economics 14. (March) pp. 33-69.
- DeAngelo, Harry, Linda DeAngelo and Edward M. Rice. 1984. "Going Private: Minority Freezeouts and Stockholder Wealth", Journal of Law and Economics. 27 (October). pp. 367-401.
- Dodd, Peter and Richard Ruback. 1977. "Tender Offers and Stockholder Returns: An Empirical Analysis". Journal of Financial Economics. 5, (December) pp. 351-373.
- Fischel, Daniel R. 1986. "Organized Exchanges and The Regulation of Dual Class Common Stock". University of Chicago and Lexecon Inc. (February).
- Gilson, Ronald J. 1987. "Evaluating Dual Class Common Stock: The Relevance of Substitutes". Mimeo. Stanford Law School.
- Gordon, Jeffrey N. 1986. "Ties That Bond: Dual Class Common and the Problem of Shareholder Choice". New York University School of Law. (November).
- Lease, Ronald C., John J. McConnell, and Wayne H. Mikkelson. 1983. "The Market Value of Control in Publicly-Traded Corporations". Journal of Financial Economics 11. (April) pp. 439-471.
- Partch, M. Megan. 1986. "The Creation of a Class of Limited Voting Common Stock and Shareholder Wealth". forthcoming Journal of Financial Economics.
- Pound, John. 1986. "The Vote Guarantee". Institutional Shareholder Services.

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